

Contactless Torque Sensor, rotating

Series 86-2643

This sensor has a contactless and digital signal transmission from rotor to stator, which means no signal falsification and maintenance-free



86-2643-xxxx

Nominal torque from 0,1 N·m ... 5.000 N·m

Accuracy class optional 0.05% f. scale

Active output $\pm 5V$ (optional $\pm 10V$)

Speed up to 30.000min^{-1}

Virtually no influence of the bearing friction on the measuring signal

Very short axial length

High torsional stiffness

Reliable and durable

Simple handling and assembly

Special version on request

Integrated speed/angle measurement optional

86-2643

Technical Data Model 86-2643

Type	Article number	Nominal Torque [N·m]	Limit Speed [min ⁻¹]	Springrate [N·m/rad]	Mass Moment of Inertia [kg·m ²]		Limit Thrust Load [N] ¹	Limit Shear Force [N] ²
					Drive side	Test side		
86-2643-4100	114347	0,1	30000	1,8E+01	9,2E-06	2,5E-07	43	1,5
86-2643-4200	114348	0,2	30000	1,8E+01	9,2E-06	2,5E-07	58	2
86-2643-4500	112805	0,5	30000	9,4E+01	9,2E-06	2,5E-07	240	3
86-2643-5001	112804	1	30000	9,4E+01	9,2E-06	2,5E-07	240	3
86-2643-5002	112593	2	30000	3,7E+02	9,2E-06	2,5E-07	480	7
86-2643-5005	112381	5	30000	7,7E+02	9,2E-06	2,6E-07	900	16,5
86-2643-5010	112806	10	30000	8,8E+02	9,3E-06	3,4E-07	1050	21
86-2643-5020	112447	20	20000	5,1E+03	1,2E-04	6,8E-06	2300	44
86-2643-5030	107403	30	20000	5,1E+03	1,2E-04	6,8E-06	2300	44
86-2643-5050	112807	50	20000	9,6E+03	1,2E-04	7,4E-06	5000	142
86-2643-5100	112808	100	20000	9,6E+03	1,2E-04	7,4E-06	5000	142
86-2643-5200	112810	200	15000	8,9E+04	5,4E-04	4,4E-04	10000	275
86-2643-5500	112811	500	15000	1,3E+05	5,4E-04	4,4E-04	13000	400
86-2643-6001	112812	1000	15000	1,7E+05	6,4E-04	5,3E-04	20000	920
86-2643-6002	112814	2000	12000	6,3E+05	5,7E-03	5,1E-03	34000	1250
86-2643-6005	112816	5000	12000	9,6E+05	5,8E-03	5,2E-03	64000	2900

Technical Data

Accuracy class	0,1	% f. s.
Repeatability (DIN 1319)	±0,02	%
Supply voltage	12...28	VDC
Current consumption	≤60	mA
Output signal	±5V	
Control signal excitation	L<2,0; H>3,5	V
Sample rate	10	kSample
Reference temperature	23	°C
Nominal temperature range	5 ... 45	°C
Service temperature range	0 ... 60	°C
Storage temperature range	-10 ... 70	°C
Temperature coefficient of sensitivity	±0,01	% f. s./K
Temperature coefficient of zero signal	±0,02	% f. s./K
Service torque (static)	150	% f. s.
Limit torque (static)	200	% f. s.
Ultimate torque (static)	>300	% f. s.
Bandwidth (DIN 50100)	70 (peak - peak)	%
Level of protection (DIN EN 60529)	IP50	
Electrical connection	12-pin series 581 ³	

Pin Connection Model 86-2643

12pin

Pin A	NC	-
Pin B	Opt. Signal angle B	5 V TTL
Pin C	Signal (+)	±5 V (±10V)
Pin D	Signal (GND)	0 V
Pin E	Supply (GND)	0 V
Pin F	Supply (+)	12 ... 28 VDC
Pin G	Opt. Signal angle A	5 V TTL
Pin H	NC	-
Pin J	NC	-
Pin K	Control signal	L <2,0 V; H >3,5 V
Pin L	NC	-
Pin M	Shield	

Option/Accessories

Article No.	Description
101695	Accuracy class 0,05 % f. s.
103562	Output signal ±10 V
101560	Speed/angle measurement, 2 x 360 impulses, 90° displaced, 5 V TTL
41382	Female cable connector 12-pin series 581
45598	Female angled connector 12-pin series 682
10270	Connection cable, 3 m, 12-pin series 581, free soldered ends
10345	Connection cable angled, 3 m, 12-pin series 682, free soldered ends
on request	Keys according DIN 6885

Option Calibrations

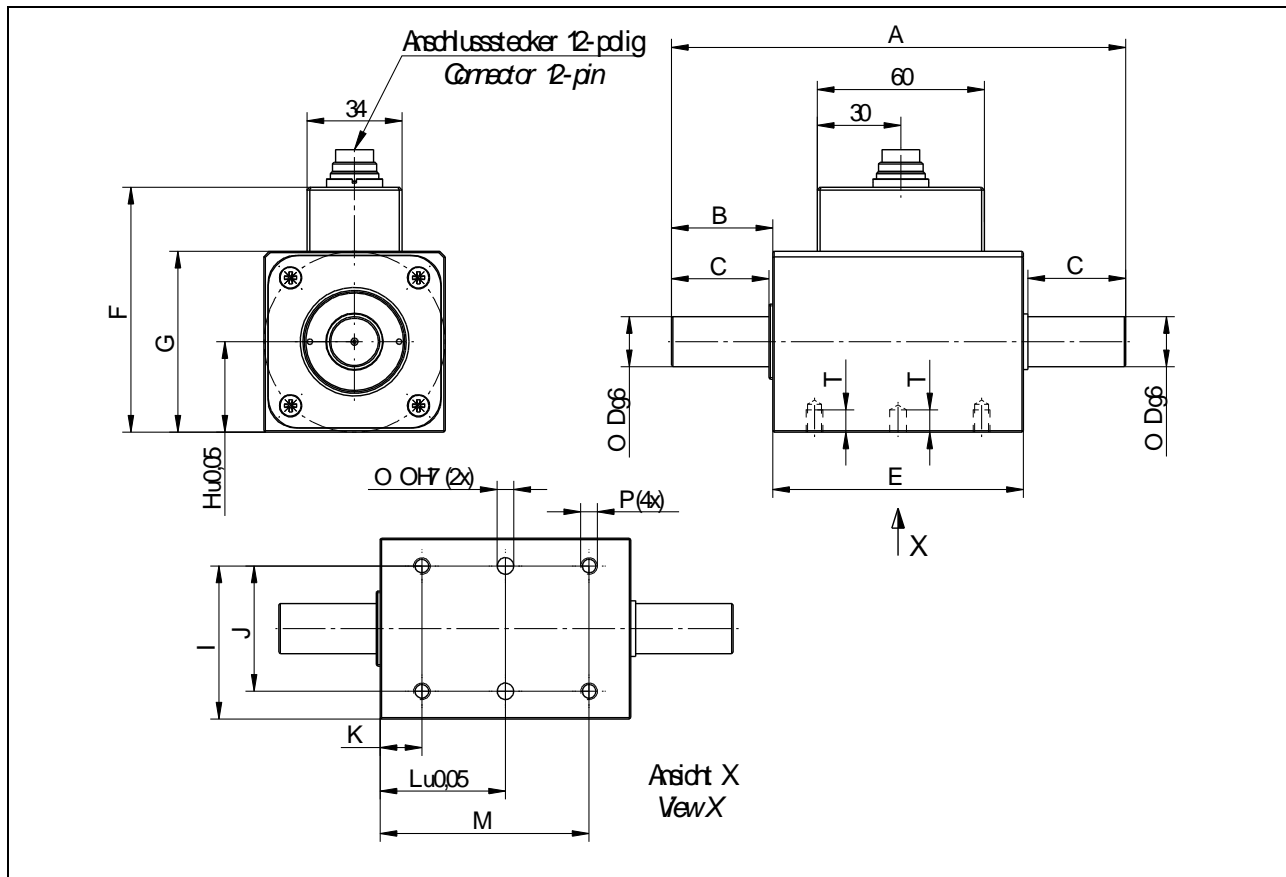
Article No.	Description	Steps	Norm
400676	Linearity diagram	25%	Factory standard
400664	Linearity diagram	10%	
400961	Proprietary calibration	3	
400700	Proprietary calibration	5	VDI/VDE 2646
400688	Proprietary calibration	8	
	DAkKS-Calibration		on request

[1] Mass moments of inertia apply for clamping ring hub at largest bore

[2] Without option speed measurement

[3] Female cable connector in scope of delivery at first delivery

Mechanical Dimension



Nominal Torque [N·m]	Dimensions [mm]															
	A	B	C	Ø D	E	F	G	H	I	J	K	L	M	O	P	T
0,1 / 0,2 / 0,5 / 1 / 2 / 5	110	19	17	8	71	63	40	20	35	30	12	35,5	59	4	M4	8
10	110	19	17	10	71	63	40	20	35	30	12	35,5	59	4	M4	8
20 / 30 / 50 / 100	163	36,5	35	18	90	88	65	32,5	55	45	15	45	75	6	M6	8
200 / 500	234	56,5	55	32	120	118	95	47,5	82,5	70	20	60	100	8	M8	14
1000	234	56,5	55	42	120	118	95	47,5	82,5	70	20	60	100	8	M8	14
2000 / 5000	372	114	110	70	144	163	140	70	120	100	25	72	119	12	M12	20

86-2643